

1 **ABSTRACT OF THE DISCLOSURE**

2 A holographic data storage system having high recording density and
3 compact memory architecture is disclosed. The system includes a laser light
4 source, a spatial light modulator (40) for data input, a beam splitter (50) for
5 separating out part of the parallel laser beams as reference beam, and a beam
6 steering system (60). Parallel laser beams passing through the spatial light
7 modulator (40) form a two-dimensional signal beam carrying digital data.
8 Unique patterns are then generated from interference of the signal beam and the
9 reference beam, which can be recorded into the volume holographic medium (10)
10 with unique incident position 、 angle and cross sectional phase distribution of
11 reference beam.